

WEST

Generate Collection

Search Results - Record(s) 1 through 10 of 39 returned.**1. Document ID: US 5859175 A**

L16: Entry 1 of 39

File: USPT

Jan 12, 1999

US-PAT-NO: 5859175

DOCUMENT-IDENTIFIER: US 5859175 A

TITLE: Process for the preparation of polyether amide solutions, steam-sterilizable dialysis membranes obtainable using the polyether-amide solutions, and a process for the production of these membranes

DATE-ISSUED: January 12, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|-----------|-------|----------|---------|
| Blatter; Karsten | Eppstein | N/A | N/A | DEX |
| Wagener; Reinhard | Florsheim | N/A | N/A | DEX |
| Bell; Carl Martin | Hechingen | N/A | N/A | DEX |
| Gohl; Hermann Josef | Bisingen | N/A | N/A | DEX |

US-CL-CURRENT: 528/310; 210/490, 210/492, 210/500.38, 264/204, 264/344, 264/41, 264/49, 528/322, 528/332, 528/335, 528/336, 528/368

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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2. Document ID: US 5858910 A

L16: Entry 2 of 39

File: USPT

Jan 12, 1999

US-PAT-NO: 5858910

DOCUMENT-IDENTIFIER: US 5858910 A

TITLE: Chiral stationary phase based on yohimbine

DATE-ISSUED: January 12, 1999

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------|-------------------|-------|----------|---------|
| House; David W. | Arlington Heights | IL | N/A | N/A |

US-CL-CURRENT: 502/401; 210/500.37, 210/500.38, 210/502.1, 502/400, 502/407

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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3. Document ID: US 5679264 A

L16: Entry 3 of 39

File: USPT

Oct 21, 1997

US-PAT-NO: 5679264
DOCUMENT-IDENTIFIER: US 5679264 A

TITLE: Gas plasma treated porous medium and method of separation using same

DATE-ISSUED: October 21, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|-----------|-------|----------|---------|
| Gsell; Thomas Charles | Glen Cove | NY | N/A | N/A |

US-CL-CURRENT: 210/767; 210/188, 210/503, 210/508, 210/649, 427/243, 427/244,
427/535, 427/536, 427/538, 427/539, 95/241, 95/273

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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4. Document ID: US 5674398 A

L16: Entry 4 of 39

File: USPT

Oct 7, 1997

US-PAT-NO: 5674398
DOCUMENT-IDENTIFIER: US 5674398 A

TITLE: Composite reverse osmosis membrane

DATE-ISSUED: October 7, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|-------|-------|----------|---------|
| Hirose; Masahiko | Osaka | N/A | N/A | JPX |
| Ikeda; Kenichi | Osaka | N/A | N/A | JPX |
| Maeda; Masatoshi | Osaka | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.38; 210/490, 210/500.37

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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5. Document ID: US 5593588 A

L16: Entry 5 of 39

File: USPT

Jan 14, 1997

US-PAT-NO: 5593588
DOCUMENT-IDENTIFIER: US 5593588 A

TITLE: Composite reverse osmosis membrane having active layer of aromatic polyester or copolymer of aromatic polyester and aromatic polyamide

DATE-ISSUED: January 14, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|-------|-------|----------|---------|
| Kim; Jae-Jin | Seoul | N/A | N/A | KRX |
| Kim; Chang-Keun | Seoul | N/A | N/A | KRX |
| Kwak; Seung-Yeop | Seoul | N/A | N/A | KRX |

US-CL-CURRENT: 210/490; 210/500.27, 210/500.37, 210/500.38, 210/500.41

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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6. Document ID: US 5562826 A

L16 Entry 6 of 39

File: USPT

Oct 8, 1996

US-PAT-NO: 5562826

DOCUMENT-IDENTIFIER: US 5562826 A

TITLE: Semipermeable, porous, asymmetric polyether amide membranes

DATE-ISSUED: October 8, 1996

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------|-------------------|-------|----------|---------|
| Schneider; J urgen | Waldems | N/A | N/A | DEX |
| Wagener; Reinhard | Kelkheim | N/A | N/A | DEX |
| Kreuder; Willi | Mainz | N/A | N/A | DEX |
| Delius; Ulrich | Frankfurt am Main | N/A | N/A | DEX |
| Wildhardt; J urgen | H unstetten | N/A | N/A | DEX |

US-CL-CURRENT: 210/490; 210/500.23, 210/500.38, 264/41

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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7. Document ID: US 5536413 A

L16: Entry 7 of 39

File: USPT

Jul 16, 1996

US-PAT-NO: 5536413

DOCUMENT-IDENTIFIER: US 5536413 A

TITLE: Method for treating a parenteral emulsion-containing medicament fluid

DATE-ISSUED: July 16, 1996

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------------|-----------|-------|----------|---------|
| Bormann; Thomas J. | Melville | NY | N/A | N/A |
| Gsell; Thomas C. | Glen Cove | NY | N/A | N/A |
| Matkovich; Vlado I. | Glen Cove | NY | N/A | N/A |
| Del Giacco; Gerard R. | Yonkers | NY | N/A | N/A |

US-CL-CURRENT: 210/650; 210/436, 210/472, 210/651, 210/767, 422/1

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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8. Document ID: US 5536408 A

L16: Entry 8 of 39

File: USPT

Jul 16, 1996

US-PAT-NO: 5536408

DOCUMENT-IDENTIFIER: US 5536408 A

TITLE: Hydrophilic, asymmetric, chemically-resistant polyaramide membrane

DATE-ISSUED: July 16, 1996

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------------|-------------------|-------|----------|---------|
| Wagener; Reinhard | Kelkheim | N/A | N/A | DEX |
| Schneider; Jurgen | Waldems | N/A | N/A | DEX |
| Delius; Ulrich | Frankfurt am Main | N/A | N/A | DEX |
| Herold; Friedrich | Hofheim am Taunus | N/A | N/A | DEX |
| Miess; Georg-Emerich | Regensburg | N/A | N/A | DEX |
| Meyer-Blumenroth; Ulrich | Idstein/Taunus | N/A | N/A | DEX |

US-CL-CURRENT: 210/490; 210/500.23, 210/500.38

| | | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|------|------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC | Draw | Desc | Image |
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9. Document ID: US 5505851 A

L16: Entry 9 of 39

File: USPT

Apr 9, 1996

US-PAT-NO: 5505851

DOCUMENT-IDENTIFIER: US 5505851 A

TITLE: Semipermeable membranes of homogeneously miscible polymer alloys

DATE-ISSUED: April 9, 1996

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------------|-------------------|-------|----------|---------|
| Wagener; Reinhard | Florsheim am Main | N/A | N/A | DEX |
| Helmer-Metzmann; Freddy | Mainz | N/A | N/A | DEX |
| Herrmann-Schonherr; Otto | Bensheim | N/A | N/A | DEX |

US-CL-CURRENT: 210/490; 210/500.23, 210/500.38, 264/41, 525/420, 96/13, 96/14

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|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|------|------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC | Draw | Desc | Image |
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10. Document ID: US 5443743 A

L16: Entry 10 of 39

File: USPT

Aug 22, 1995

WEST

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Search Results - Record(s) 21 through 30 of 39 returned.

└ 21. Document ID: US 4820418 A

L16: Entry 21 of 39

File: USPT

Apr 11, 1989

US-PAT-NO: 4820418

DOCUMENT-IDENTIFIER: US 4820418 A

TITLE: Water-alcohol separating membrane and method for separation of water and alcohol by the use thereof

DATE-ISSUED: April 11, 1989

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------|---------|-------|----------|---------|
| Hirotsu; Toshihiro | Tsukuba | N/A | N/A | JPX |
| Nakajima; Shigeru | Fuchu | N/A | N/A | JPX |

US-CL-CURRENT: 210/640; 210/500.27

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

└ 22. Document ID: US 4778596 A

L16: Entry 22 of 39

File: USPT

Oct 18, 1988

US-PAT-NO: 4778596

DOCUMENT-IDENTIFIER: US 4778596 A

TITLE: Semipermeable encapsulated membranes, process for their manufacture and their use

DATE-ISSUED: October 18, 1988

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|---------------|-------|----------|---------|
| Linder; Charles | Rehovot | N/A | N/A | ILX |
| Aviv; Gershon | Tel Aviv | N/A | N/A | ILX |
| Perry; Mordechai | Petach Tikvah | N/A | N/A | ILX |
| Kotraro; Reuven | Rehovot | N/A | N/A | ILX |

US-CL-CURRENT: 210/638; 210/490, 210/500.38, 210/651, 210/654

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

└ 23. Document ID: US 4761234 A

L16: Entry 23 of 39

File: USPT

Aug 2, 1988

US-PAT-NO: 4761234
DOCUMENT-IDENTIFIER: US 4761234 A

TITLE: Interfacially synthesized reverse osmosis membrane

DATE-ISSUED: August 2, 1988

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|-------|-------|----------|---------|
| Uemura; Tadahiro | Kyoto | N/A | N/A | JPX |
| Himeshima; Yoshio | Otsu | N/A | N/A | JPX |
| Kurihara; Masaru | Otsu | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.38; 210/420, 210/475

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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☐ 24. Document ID: US 4758343 A

L16: Entry 24 of 39

File: USPT

Jul 19, 1988

US-PAT-NO: 4758343
DOCUMENT-IDENTIFIER: US 4758343 A

TITLE: Interfacially synthesized reverse osmosis membrane

DATE-ISSUED: July 19, 1988

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|-------|-------|----------|---------|
| Sasaki; Tatsuo | Ohtsu | N/A | N/A | JPX |
| Fujimaki; Hideo | Shiga | N/A | N/A | JPX |
| Uemura; Tadahiro | Kyoto | N/A | N/A | JPX |
| Kurihara; Masaru | Ohtsu | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.28; 210/500.38, 428/315.9, 428/420

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☐ 25. Document ID: US 4720345 A

L16: Entry 25 of 39

File: USPT

Jan 19, 1988

US-PAT-NO: 4720345
DOCUMENT-IDENTIFIER: US 4720345 A

TITLE: Semipermeable membranes of modified styrene-based polymers, process for their manufacture and their use

DATE-ISSUED: January 19, 1988

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|---------------|-------|----------|---------|
| Linder; Charles | Rehovot | N/A | N/A | ILX |
| Aviv; Gershon | Tel Aviv | N/A | N/A | ILX |
| Perry; Mordechai | Petach Tikvah | N/A | N/A | ILX |
| Kotraro; Reuven | Rehovot | N/A | N/A | ILX |

US-CL-CURRENT: 210/650; 210/500.29, 210/500.34, 210/500.37, 210/500.38,
210/500.41, 210/500.42, 210/654

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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☐ 26. Document ID: US 4704324 A

L16: Entry 26 of 39

File: USPT

Nov 3, 1987

US-PAT-NO: 4704324
DOCUMENT-IDENTIFIER: US 4704324 A

TITLE: Semi-permeable membranes prepared via reaction of cationic groups with nucleophilic groups

DATE-ISSUED: November 3, 1987

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|-----------|-------|----------|---------|
| Davis; Thomas E. | Lafayette | CA | N/A | N/A |
| Schmidt; Donald L. | Midland | MI | N/A | N/A |
| Kau; Jee I. | Concord | CA | N/A | N/A |
| Wessling; Ritchie A. | Midland | MI | N/A | N/A |
| Whipple; Sharon S. | Sanford | MI | N/A | N/A |
| Fibiger; Richard F. | Midland | MI | N/A | N/A |
| Pickelman; Dale M. | Auburn | MI | N/A | N/A |

US-CL-CURRENT: 428/308.4; 210/500.27, 210/500.34, 210/500.35, 210/500.38,
210/500.42, 210/500.43, 428/304.4, 428/311.71, 428/313.5, 428/315.5

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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☐ 27. Document ID: US 4690766 A

L16: Entry 27 of 39

File: USPT

Sep 1, 1987

US-PAT-NO: 4690766
DOCUMENT-IDENTIFIER: US 4690766 A

TITLE: Chemically modified semipermeable polysulfone membranes and their use in reverse osmosis and ultrafiltration

DATE-ISSUED: September 1, 1987

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|---------------|-------|----------|---------|
| Linder; Charles | Rehovot | N/A | N/A | ILX |
| Aviv; Gershon | Tel Aviv | N/A | N/A | ILX |
| Perry; Mordechai | Petach Tikvah | N/A | N/A | ILX |
| Kotraro; Reuven | Rehovot | N/A | N/A | ILX |

US-CL-CURRENT: 210/654; 210/500.28, 210/500.29, 210/500.33, 210/500.37,
210/500.38, 210/500.39, 210/500.41, 210/500.42

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|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
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28. Document ID: US 4690765 A

L16: Entry 28 of 39

File: USPT

Sep 1, 1987

US-PAT-NO: 4690765
DOCUMENT-IDENTIFIER: US 4690765 A

TITLE: Chemically modified semipermeable membranes and their use in reverse osmosis and ultrafiltration

DATE-ISSUED: September 1, 1987

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|---------------|-------|----------|---------|
| Linder; Charles | Rehovot | N/A | N/A | ILX |
| Aviv; Gershon | Tel Aviv | N/A | N/A | ILX |
| Perry; Mordechai | Petach Tikvah | N/A | N/A | ILX |
| Kotraro; Reuven | Rehovot | N/A | N/A | ILX |

US-CL-CURRENT: 210/654; 210/500.28, 210/500.29, 210/500.33, 210/500.37,
210/500.38, 210/500.39, 210/500.41, 210/500.42

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWC | Draw Desc | Image |
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29. Document ID: US 4468503 A

L16: Entry 29 of 39

File: USPT

Aug 28, 1984

US-PAT-NO: 4468503

DOCUMENT-IDENTIFIER: US 4468503 A

TITLE: Amino ketone cross-linked polyphenylene oxide

DATE-ISSUED: August 28, 1984

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|-----------|-------|----------|---------|
| Zampini; Anthony | St. Louis | MO | N/A | N/A |
| Malon; Raymond F. | Edmundson | MO | N/A | N/A |

US-CL-CURRENT: 525/390; 210/500.33, 210/500.38, 96/4

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC | Draw Desc | Image |
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☐ 30. Document ID: US 4468500 A

L16: Entry 30 of 39

File: USPT

Aug 28, 1984

US-PAT-NO: 4468500

DOCUMENT-IDENTIFIER: US 4468500 A

TITLE: Amino ketone cross-linked polyphenylene oxide

DATE-ISSUED: August 28, 1984

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|-----------|-------|----------|---------|
| Malon; Raymond F. | Edmundson | MO | N/A | N/A |
| Zampini; Anthony | St. Louis | MO | N/A | N/A |

US-CL-CURRENT: 525/390; 210/500.33, 210/500.37, 210/500.38, 96/4

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
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| Terms | Documents |
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| 13 and bromine | 39 |

Documents, starting with Document: Display Format:

WEST

Generate Collection

Search Results - Record(s) 31 through 39 of 39 returned.

└ 31. Document ID: US 4388189 A

L16: Entry 31 of 39

File: USPT

Jun 14, 1983

US-PAT-NO: 4388189

DOCUMENT-IDENTIFIER: US 4388189 A

TITLE: Process for preparation of improved semipermeable composite membranes

DATE-ISSUED: June 14, 1983

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP | CODE | COUNTRY |
|----------------------|---|-------|-----|------|---------|
| Kawaguchi; Takeyuki | Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |
| Minematsu; Hiroyoshi | Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |
| Hayashi; Yuzuru | Yamate-machi, Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |
| Hara; Shigeyoshi | Yamate-machi, Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |

US-CL-CURRENT: 210/490; 210/500.28, 210/500.33, 210/500.37, 210/500.38, 427/245

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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└ 32. Document ID: US 4374933 A

L16: Entry 32 of 39

File: USPT

Feb 22, 1983

US-PAT-NO: 4374933

DOCUMENT-IDENTIFIER: US 4374933 A

TITLE: Method of preparation of porous membranes and adsorbents

DATE-ISSUED: February 22, 1983

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP | CODE | COUNTRY |
|-----------------|----------|-------|-----|------|---------|
| Scholze; Horst | Wurzburg | N/A | N/A | | DEX |
| Schmidt; Helmut | Hochberg | N/A | N/A | | DEX |
| Bottner; Harald | Gerbrunn | N/A | N/A | | DEX |

US-CL-CURRENT: 521/64; 210/500.33, 210/500.36, 210/500.38, 521/154, 528/10,
528/12, 528/14, 528/16, 528/17, 528/18, 528/20, 528/21, 528/23, 528/25, 528/29,
528/31, 528/32, 528/38, 528/39, 528/41, 528/5, 528/8, 528/9

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|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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└ 33. Document ID: US 4302336 A

L16: Entry 33 of 39

File: USPT

Nov 24, 1981

US-PAT-NO: 4302336

DOCUMENT-IDENTIFIER: US 4302336 A

TITLE: Semipermeable composite membrane

DATE-ISSUED: November 24, 1981

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|---------|-------|----------|---------|
| Kawaguchi; Takeyuki | Iwakuni | N/A | N/A | JPX |
| Taketani; Yutaka | Iwakuni | N/A | N/A | JPX |
| Sasaki; Noriaki | Iwakuni | N/A | N/A | JPX |
| Minematsu; Hiroyoshi | Iwakuni | N/A | N/A | JPX |
| Hayashi; Yuzuru | Iwakuni | N/A | N/A | JPX |
| Hara; Shigeyoshi | Iwakuni | N/A | N/A | JPX |

US-CL-CURRENT: 210/654; 210/500.33, 210/500.38, 210/500.41, 427/245

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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└ 34. Document ID: US 4252652 A

L16: Entry 34 of 39

File: USPT

Feb 24, 1981

US-PAT-NO: 4252652

DOCUMENT-IDENTIFIER: US 4252652 A

TITLE: Process of using a semi-permeable membrane of acrylonitrile copolymers

DATE-ISSUED: February 24, 1981

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---------------------|----------|-------|----------|---------|
| Elfert; Klaus | Krefeld | N/A | N/A | DEX |
| Rosenkranz; Hans J. | Krefeld | N/A | N/A | DEX |
| Wolf; Gerhard D. | Dormagen | N/A | N/A | DEX |
| Bentz; Francis | Cologne | N/A | N/A | DEX |

US-CL-CURRENT: 210/654; 210/500.25, 210/500.38, 210/500.39, 210/500.41,
210/500.43, 526/288

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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└ 35. Document ID: US 4242208 A

L16: Entry 35 of 39

File: USPT

Dec 30, 1980

US-PAT-NO: 4242208
DOCUMENT-IDENTIFIER: US 4242208 A

TITLE: Semipermeable composite membrane and process for preparation thereof

DATE-ISSUED: December 30, 1980

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|---------|-------|----------|---------|
| Kawaguchi; Takeyuki | Iwakuni | N/A | N/A | JPX |
| Taketani; Yutaka | Iwakuni | N/A | N/A | JPX |
| Minematsu; Hiroyoshi | Iwakuni | N/A | N/A | JPX |
| Sasaki; Noriaki | Iwakuni | N/A | N/A | JPX |
| Hayashi; Yuzuru | Iwakuni | N/A | N/A | JPX |
| Hara; Shigeyoshi | Iwakuni | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.28; 210/500.25, 210/500.26, 210/500.34, 210/500.35,
210/500.36, 210/500.38, 210/500.41, 210/500.42, 210/654, 427/246, 521/63

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|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

┌ 36. Document ID: US 4238590 A

L16: Entry 36 of 39

File: USPT

Dec 9, 1980

US-PAT-NO: 4238590
DOCUMENT-IDENTIFIER: US 4238590 A

TITLE: Process for the production of silicic acid heteropolycondensates useful
as membranes and adsorbents

DATE-ISSUED: December 9, 1980

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------|----------|-------|----------|---------|
| Scholze; Horst | Wurzburg | N/A | N/A | DEX |
| Schmidt; Helmut | Hochberg | N/A | N/A | DEX |

US-CL-CURRENT: 528/5; 210/500.25, 210/500.37, 210/500.38, 210/500.41, 521/154,
521/51, 528/12, 528/14, 528/16, 528/20, 528/21, 528/25, 528/29, 528/31, 528/32,
528/38, 528/39, 528/41, 528/42, 528/43, 528/8, 528/9

| | | | | | | | | | | | |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

┌ 37. Document ID: US 4233434 A

L16: Entry 37 of 39

File: USPT

Nov 11, 1980

US-PAT-NO: 4233434
DOCUMENT-IDENTIFIER: US 4233434 A

TITLE: Polyamide from aromatic phosphorus containing diamine

DATE-ISSUED: November 11, 1980

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|---------------|-------|----------|---------|
| Kraus; Menahem A. | Rehovot | N/A | N/A | ILX |
| Frommer; Moshe A. | Rehovot | N/A | N/A | ILX |
| Nemas; Mara | Neve Monoson | N/A | N/A | ILX |
| Gutman; Rodika | Kiryat Sharet | N/A | N/A | ILX |

US-CL-CURRENT: 528/337; 210/500.38, 528/167, 528/220, 528/321

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

└ 38. Document ID: US 4217227 A

L16: Entry 38 of 39

File: USPT

Aug 12, 1980

US-PAT-NO: 4217227
DOCUMENT-IDENTIFIER: US 4217227 A

TITLE: Semipermeable membranes of copolyamides

DATE-ISSUED: August 12, 1980

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|----------|-------|----------|---------|
| Elfert; Klaus | Krefeld | N/A | N/A | DEX |
| Wolf; Gerhard D. | Dormagen | N/A | N/A | DEX |
| Bentz; Francis | Cologne | N/A | N/A | DEX |
| Kunzel; Hans E. | Dormagen | N/A | N/A | DEX |

US-CL-CURRENT: 210/500.33; 210/500.23, 210/500.25, 210/500.29, 210/500.38,
210/500.41, 521/147

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

└ 39. Document ID: US RE30351 E

L16: Entry 39 of 39

File: USPT

Jul 29, 1980

US-PAT-NO: RE30351

DOCUMENT-IDENTIFIER: US RE30351 E

TITLE: Aromatic polyimide, polyester and polyamide separation membranes

DATE-ISSUED: July 29, 1980

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|----------------|-------|----------|---------|
| Hoehn; Harvey H. | Hockessin | DE | N/A | N/A |
| Richter; John W. | Kennett Square | PA | N/A | N/A |

US-CL-CURRENT: 95/54; 210/500.38, 210/500.39, 95/55, 96/4

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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| Terms | Documents |
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| 13 and bromine | 39 |

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Documents, starting with Document:

39

Display Format:

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File: USPT

Oct 7, 1997

DOCUMENT-IDENTIFIER: US 5674398 A
TITLE: Composite reverse osmosis membrane.

ABPL:
A composite reverse osmosis membrane comprising a thin film and a microporous substrate as a support therefor, said thin film mainly comprising a crosslinked polyamide obtained by the interfacial polymerization of

BSPR:
A larger number of composite reverse osmosis membranes of the above kind are presently known which comprise a substrate and formed thereon a thin film of a polyamide obtained by the interfacial polymerization of a polyfunctional aromatic amine and a polyfunctional aromatic acid halide (e.g., U.S. Pat. Nos. 4,277,344, 4,761,234, and 4,872,984 and JP-A-63-218208). (The term "JP-A" as used herein means an "unexamined published Japanese patent application.")

BSPR:
In order to accomplish the above object, the composite reverse osmosis membrane of the present invention comprises a thin film and a microporous substrate as a support therefor, said thin film mainly comprising a crosslinked polyamide obtained by the interfacial polymerization of

DEPR:
The acid halide component (b) for use in this invention is characterized in that it comprises at least a benzenehexacarbonyl halide (a benzene ring having six --COX groups where X each independently represents a halogen atom). If component (b) does not contain a benzenehexacarbonyl halide, sufficient water permeability cannot be obtained at low operation pressures. The acid halide component (b) for use in this invention is either a benzenehexacarbonyl halide alone or a mixture thereof with a monomeric acid halide compound having at least two acid halide groups. The kind of the halogen atoms contained in the benzenehexacarbonyl halide is not limited, and examples thereof include chlorine and bromine, with chlorine being preferred. The halogen atoms contained in the benzenehexacarbonyl halide may be the same or different.

DEPR:

In the present invention, a polar-solvent solution containing the amine component described above is subjected to interfacial polymerization with an organic-solvent solution containing the acid halide component described above to form on a microporous substrate a thin film consisting mainly of a crosslinked polyamide. Thus, a composite reverse osmosis membrane is obtained.

DEPR:
A surfactant such as, for example, sodium dodecylbenzenesulfonate, sodium dodecylsulfate, or sodium laurylsulfate may be further incorporated. These surfactants are effective in improving the wettability of the microporous substrate by the polar-solvent solution containing the amine component. For accelerating the interfacial polycondensation reaction, it is desirable to use sodium hydroxide or trisodium phosphate, which each is capable of removing the hydrogen halide resulting from the interfacial reaction, or to use an acylation catalyst or the like as a catalyst.

DEPR:
The thin film can be provided on the microporous substrate as follows. The microporous substrate is coated with a polar-solvent solution containing the amine component. Subsequently, an organic-solvent solution containing the acid

halide component is coated thereon, whereby interfacial polymerization is conducted to form a thin film. The polymerization temperature is preferably from 5.degree. to 50.degree. C. The thickness of the thin film is preferably from 0.001 to 1 .mu.m.

CLPR:

1. A composite reverse osmosis membrane comprising a thin film and a microporous substrate as a support therefor, said thin film mainly comprising a crosslinked polyamide obtained by the interfacial polymerization of

CIOR:

210/500.38

CCOR:

210/500.38

CIFS:

210/500.38

UROR:

210/500.38

UROR:

210/500.38

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Jun 14, 1983

DOCUMENT-IDENTIFIER: US 4388189 A
TITLE: Process for preparation of improved semipermeable composite membranes

ABPV:
(1) said polymeric material contains dispersed therein a polyfunctional compound having at least two functional groups (b) substantially incapable of reacting with the primary or secondary amino groups in said polymer at a temperature at which the interfacial crosslinking is carried out, but capable of reacting easily with either the primary or secondary amino groups or both in said polymer at a temperature at least 30.degree. C. higher than said crosslinking temperature, and

BSPR:
Some methods were suggested in which a porous layer is prepared from a separate material, and a hydrophilic reactive polymer and a crosslinking agent are reacted on the porous layer to form a crosslinked film-like semipermeable layer thereon. It was suggested that by these methods, there can be obtained a semipermeable composite membrane having greatly improved hydrolysis resistance, biodegradation resistance, pressure compaction resistance and storability in the dried state in addition to improved basic properties. For example, U.S. Pat. No. 3,951,815 discloses a composite semipermeable membrane comprising a microporous substrate and an ultrathin film formed of a crosslinked, grafted polyethylenimine disposed on one surface of said microporous substrate that has been crosslinked with a di- or tri-functional compound such as isophthaloyl chloride and grafted with a graft reactant such as acrylonitrile or epichlorohydrin. U.S. Pat. No. 4,005,012 describes a composite semipermeable membrane comprising an ultrathin film formed by contacting an amine-modified polyepihalohydrin with a polyfunctional agent on a microporous substrate to form this film on one surface of the microporous substrate. Also, U.S. Pat. No. 4,039,440 discloses a reverse osmosis membrane prepared in situ on a porous support by initial formation of a layer of polyethyleneimine on the support, followed by interfacial reaction with a polyfunctional reagent to produce a thin surface coating which possesses salt barrier characteristics.

BSPR:
The aforesaid semipermeable composite membrane composed of the interfacial crosslinked product of polyethyleneimine or amine-modified polyepichlorohydrin may contain primary and/or secondary amino groups and/or secondary amide groups ##STR1## which are susceptible to oxidation or soil deposition remain in the cross-linked polymer. In order to reduce the amount of residual reactive sites which may possibly undergo oxidative attack or soil deposition in such a crosslinked product, there was suggested a method comprising blocking these sites by grafting a reagent which induces addition reaction at these reactive sites (see British Patent No. 1,536,227 and U.S. Pat. No. 3,951,815). The British Patent discloses a grafting method which comprises impregnating a crosslinked composite membrane with a grafting reagent (to be referred to as the method 1); a grafting method comprising grafting the reagent to the membrane before crosslinking, and then performing the cross-linking reaction of the membrane (to be referred to as the method 2); and a grafting method which comprises performing the crosslinking reaction and the grafting reaction simultaneously (to be referred to as the method 3). According to the method 1, since the surface layer of the membrane is rendered compact by the interfacial crosslinking before the grafting reaction, the penetration of the grafting reagent is insufficient and the unreacted amino groups or secondary amide groups still remain in large amounts in the interior layer. Hence, it is difficult to improve the resistance of the membrane to

oxidation or soiling. According to the method 2, if the grafting reaction before the interfacial cross-linking reaction is performed sufficiently, the amount of amino groups to be involved in the subsequent interfacial crosslinking reaction decreases even at the surface layer, and therefore, the crosslinking density of the surface layer becomes insufficient, thus making it impossible to obtain a semipermeable composite membrane having excellent properties. On the contrary, an attempt to increase the crosslinking density of the surface layer by inhibiting the grafting reaction results in an insufficient effect of grafting in the interior layer, making it difficult to obtain a composite membrane of excellent properties. According to the method 3, unless there is a considerable difference in reactivity with the amino groups between the grafting agent and the crosslinking agent, the grafting agent and the crosslinking agent competitively react with the amino groups. For this reason, the crosslinking density is not sufficiently high even at the surface of the membrane which is to form an active layer, and it is difficult to obtain a membrane having suitable salt rejecting characteristics.

BSPR:

(1) said polymeric material contains dispersed therein a polyfunctional compound having at least two functional groups (b) substantially incapable of reacting with the primary or secondary amino groups in said polymer at a temperature at which the interfacial crosslinking is carried out, but capable of reacting easily with either the primary or secondary amino groups or both in said polymer at a temperature at least 30.degree. C. higher than said crosslinking temperature, and

BSPR:

The basic concept of this invention consists in the fact that a polyfunctional compound having substantially lower reactivity with active amino groups than the interfacial crosslinking agent is incorporated beforehand into the polyamino polymer used to form the semipermeable membrane layer of the semipermeable composite membrane, and after the interfacial crosslinking, a crosslinking reaction is induced between the polyamino polymer and the polyfunctional compound to form an internal anchor layer rendered water-insoluble by the crosslinking and having markedly improved oxidation resistance, soiling resistance, pressure compaction resistance (or mechanical strength), etc. between the ultrathin semipermeable layer on the surface and the microporous substrate.

BSPR:

The polyamino polymer contains structural units composed of a primary and/or a secondary amino group and a hydrocarbon group having 2 to 20 carbon atoms, preferably 2 to 15 carbon atoms, which may contain in addition to the amino group, a nitrogen atom (N), an oxygen atom (O), a halogen atom (e.g., chlorine or bromine), or a sulfur atom (S) as a heteroatom. When there is a heteroatom, it may exist in various forms. For example, the nitrogen atom may exist in the form of a tertiary or quaternary amino group; the oxygen atom may exist in the form of an ether linkage, an ester linkage, a carbonyl linkage or a hydroxyl group; and the halogen atom may exist as a substituent for hydrogen.

BSPR:

When those polyamino polymers which do not have self-gelling ability at an elevated temperature are used, it is possible to improve long-term durability and pressure compaction resistance of the resulting permselective composite membrane. Particularly, when the polyamino polymer has only secondary amino groups as the active amino groups, a properly chosen polyfunctional compound included in the polymer reacts under heat with the amino groups remaining in the membrane after the interfacial crosslinking reaction, and consequently, the membrane finally obtained is substantially free from secondary amino groups which are susceptible to oxidation. Hence, the oxidation resistance as well as the durability and pressure compaction resistance of the membrane can be improved.

BSPR:

The polyfunctional compound included in the polyamino polymer in accordance with the aforesaid basic concept of this invention is a compound having per molecule at least two functional groups (b) substantially incapable of reacting with the primary or secondary amino groups in the polymer at a temperature at which the interfacial crosslinking is carried out but capable

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DEPR:

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CLPV :

CCXR:

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Search Results - Record(s) 11 through 12 of 12 returned.

11. Document ID: US 4242208 A

L27: Entry 11 of 12

File: USPT

Dec 30, 1980

US-PAT-NO: 4242208

DOCUMENT-IDENTIFIER: US 4242208 A

TITLE: Semipermeable composite membrane and process for preparation thereof

DATE-ISSUED: December 30, 1980

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|----------------------|---------|-------|----------|---------|
| Kawaguchi; Takeyuki | Iwakuni | N/A | N/A | JPX |
| Taketani; Yutaka | Iwakuni | N/A | N/A | JPX |
| Minematsu; Hiroyoshi | Iwakuni | N/A | N/A | JPX |
| Sasaki; Noriaki | Iwakuni | N/A | N/A | JPX |
| Hayashi; Yuzuru | Iwakuni | N/A | N/A | JPX |
| Hara; Shigeyoshi | Iwakuni | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.28; 210/500.25, 210/500.26, 210/500.34, 210/500.35,
210/500.36, 210/500.38, 210/500.41, 210/500.42, 210/654, 427/246, 521/63

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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12. Document ID: US 4217227 A

L27: Entry 12 of 12

File: USPT

Aug 12, 1980

US-PAT-NO: 4217227

DOCUMENT-IDENTIFIER: US 4217227 A

TITLE: Semipermeable membranes of copolyamides

DATE-ISSUED: August 12, 1980

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|----------|-------|----------|---------|
| Elfert; Klaus | Krefeld | N/A | N/A | DEX |
| Wolf; Gerhard D. | Dormagen | N/A | N/A | DEX |
| Bentz; Francis | Cologne | N/A | N/A | DEX |
| Kunzel; Hans E. | Dormagen | N/A | N/A | DEX |

US-CL-CURRENT: 210/500.33; 210/500.23, 210/500.25, 210/500.29, 210/500.38,
210/500.41, 521/147

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
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Search Results - Record(s) 1 through 10 of 12 returned.

☒ 1. Document ID: US 5674398 A

L27: Entry 1 of 12

File: USPT

Oct 7, 1997

US-PAT-NO: 5674398

DOCUMENT-IDENTIFIER: US 5674398 A

TITLE: Composite reverse osmosis membrane

DATE-ISSUED: October 7, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|-------|-------|----------|---------|
| Hirose; Masahiko | Osaka | N/A | N/A | JPX |
| Ikeda; Kenichi | Osaka | N/A | N/A | JPX |
| Maeda; Masatoshi | Osaka | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.38; 210/490, 210/500.37

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☐ 2. Document ID: US 5593588 A

L27: Entry 2 of 12

File: USPT

Jan 14, 1997

US-PAT-NO: 5593588

DOCUMENT-IDENTIFIER: US 5593588 A

TITLE: Composite reverse osmosis membrane having active layer of aromatic polyester or copolymer of aromatic polyester and aromatic polyamide

DATE-ISSUED: January 14, 1997

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|-------|-------|----------|---------|
| Kim; Jae-Jin | Seoul | N/A | N/A | KRX |
| Kim; Chang-Keun | Seoul | N/A | N/A | KRX |
| Kwak; Seung-Yeop | Seoul | N/A | N/A | KRX |

US-CL-CURRENT: 210/490; 210/500.27, 210/500.37, 210/500.38, 210/500.41

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

☒ 3. Document ID: US 5308489 A

L27: Entry 3 of 12

File: USPT

May 3, 1994

US-PAT-NO: 5308489
DOCUMENT-IDENTIFIER: US 5308489 A

TITLE: Blends of polyether copolycarbonates and high molecular weight
film-forming thermoplastics

DATE-ISSUED: May 3, 1994

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-----------------|--------------------|-------|----------|---------|
| Dhein; Rolf | Krefeld | N/A | N/A | DEX |
| Ebert; Wolfgang | Krefeld | N/A | N/A | DEX |
| Hugl; Herbert | Bergisch Gladbach | N/A | N/A | DEX |
| Ohst; Holger | Odenthal-Steinhaus | N/A | N/A | DEX |

US-CL-CURRENT: 210/500.4; 210/500.28, 210/500.38, 525/133, 525/146, 525/148,
525/409, 525/433, 525/462, 525/469, 525/92A, 525/92E

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

└ 4. Document ID: US 5152894 A

L27: Entry 4 of 12

File: USPT

Oct 6, 1992

US-PAT-NO: 5152894

DOCUMENT-IDENTIFIER: US 5152894 A

TITLE: Semipermeable membrane made from a homogeneously miscible polymer blend

DATE-ISSUED: October 6, 1992

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|--------------------|----------------------------|-------|----------|---------|
| Haubs; Michael | Bad Kreuznach | N/A | N/A | DEX |
| Kreuder; Willi | Mainz | N/A | N/A | DEX |
| Krieg; Claus-Peter | Frankfurt am Main | N/A | N/A | DEX |
| Wildhardt; Juergen | Huenstetten-Wallrabenstein | N/A | N/A | DEX |

US-CL-CURRENT: 210/500.38; 210/490, 210/500.42

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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└ 5. Document ID: US 4857363 A

L27: Entry 5 of 12

File: USPT

Aug 15, 1989

US-PAT-NO: 4857363

DOCUMENT-IDENTIFIER: US 4857363 A

TITLE: Process for preparation of semipermeable composite membrane

DATE-ISSUED: August 15, 1989

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|-------|-------|----------|---------|
| Sasaki; Tatsuo | Ohtsu | N/A | N/A | JPX |
| Fujimaki; Hideo | Shiga | N/A | N/A | JPX |
| Uemura; Tadahiro | Kyoto | N/A | N/A | JPX |
| Kurihara; Masaru | Ohtsu | N/A | N/A | JPX |

US-CL-CURRENT: 427/245; 427/340, 427/342

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
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└ 6. Document ID: US 4778596 A

L27: Entry 6 of 12

File: USPT

Oct 18, 1988

US-PAT-NO: 4778596

DOCUMENT-IDENTIFIER: US 4778596 A

TITLE: Semipermeable encapsulated membranes, process for their manufacture and their use

DATE-ISSUED: October 18, 1988

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|---------------|-------|----------|---------|
| Linder; Charles | Rehovot | N/A | N/A | ILX |
| Aviv; Gershon | Tel Aviv | N/A | N/A | ILX |
| Perry; Mordechai | Petach Tikvah | N/A | N/A | ILX |
| Kotraro; Reuven | Rehovot | N/A | N/A | ILX |

US-CL-CURRENT: 210/638; 210/490, 210/500.38, 210/651, 210/654

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

└ 7. Document ID: US 4761234 A

L27: Entry 7 of 12

File: USPT

Aug 2, 1988

US-PAT-NO: 4761234

DOCUMENT-IDENTIFIER: US 4761234 A

TITLE: Interfacially synthesized reverse osmosis membrane

DATE-ISSUED: August 2, 1988

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|-------------------|-------|-------|----------|---------|
| Uemura; Tadahiro | Kyoto | N/A | N/A | JPX |
| Himeshima; Yoshio | Otsu | N/A | N/A | JPX |
| Kurihara; Masaru | Otsu | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.38; 210/420, 210/475

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

8. Document ID: US 4758343 A

L27: Entry 8 of 12

File: USPT

Jul 19, 1988

US-PAT-NO: 4758343

DOCUMENT-IDENTIFIER: US 4758343 A

TITLE: Interfacially synthesized reverse osmosis membrane

DATE-ISSUED: July 19, 1988

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|------------------|-------|-------|----------|---------|
| Sasaki; Tatsuo | Ohtsu | N/A | N/A | JPX |
| Fujimaki; Hideo | Shiga | N/A | N/A | JPX |
| Uemura; Tadahiro | Kyoto | N/A | N/A | JPX |
| Kurihara; Masaru | Ohtsu | N/A | N/A | JPX |

US-CL-CURRENT: 210/500.28; 210/500.38, 428/315.9, 428/420

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|------|-----------|-------|

9. Document ID: US 4388189 A

L27: Entry 9 of 12

File: USPT

Jun 14, 1983

US-PAT-NO: 4388189
DOCUMENT-IDENTIFIER: US 4388189 A

TITLE: Process for preparation of improved semipermeable composite membranes

DATE-ISSUED: June 14, 1983

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP | CODE | COUNTRY |
|----------------------|---|-------|-----|------|---------|
| Kawaguchi; Takeyuki | Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |
| Minematsu; Hiroyoshi | Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |
| Hayashi; Yuzuru | Yamate-machi, Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |
| Hara; Shigeyoshi | Yamate-machi, Iwakuni-shi, Yamaguchi-ken | N/A | N/A | | JPX |

US-CL-CURRENT: 210/490; 210/500.28, 210/500.33, 210/500.37, 210/500.38, 427/245

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|

10. Document ID: US 4302336 A

L27: Entry 10 of 12

File: USPT

Nov 24, 1981

US-PAT-NO: 4302336

DOCUMENT-IDENTIFIER: US 4302336 A

TITLE: Semipermeable composite membrane

DATE-ISSUED: November 24, 1981

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP | CODE | COUNTRY |
|----------------------|---------|-------|-----|------|---------|
| Kawaguchi; Takeyuki | Iwakuni | N/A | N/A | | JPX |
| Taketani; Yutaka | Iwakuni | N/A | N/A | | JPX |
| Sasaki; Noriaki | Iwakuni | N/A | N/A | | JPX |
| Minematsu; Hiroyoshi | Iwakuni | N/A | N/A | | JPX |
| Hayashi; Yuzuru | Iwakuni | N/A | N/A | | JPX |
| Hara; Shigeyoshi | Iwakuni | N/A | N/A | | JPX |

US-CL-CURRENT: 210/654; 210/500.33, 210/500.38, 210/500.41, 427/245

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KMC | Draw Desc | Image |
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|
|------|-------|----------|-------|--------|----------------|------|-----------|--------|-----|-----------|-------|

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Documents, starting with Document: 11

Display Format: CIT